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20 October 1981

USSR Report

ENERGY

No. 77

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ENERGY CONSERVATION

LITHUANIA PROGRESSES IN SAVING FUEL, TOLD TO GET READY FOR WINTER

Vilnius SOVETSKAYA LITVA in Russian 30 Aug 81 p 2

[Article by EL'TA [Lithuanian Telegraph Agency]: "Save Fuel and Energy and Prepare Well for the Winter"]

[Text] The Lithuanian SSR Council of Ministers held a meeting at which questions of saving fuel and energy and of preparing the republic's economy for the fall and winter season were discussed. Taking part were managers of ministries and agencies, deputy chairmen of ispolkoms of cities of republic subordination and of industrial regions, directors and chief engineers of associations and enterprises, and responsible workers of the Lithuanian Communist Party Central Committee, the republic's council of ministers and the People's Control Committee.

Deputy Chairman of the Lithuanian SSR Council of Ministers Yu. Rusenko conducted the meeting.

Chief of the Main Production Association for Power Engineering and Electrification of the Lithuanian SSR Yu. Nekrashas made a report.

The conference noted that, while development of the national economy was being speeded up, the demand for electrical and heat energy was rising. One of the main methods for satisfying this demand is the rational and thrifty use of energy resources. The industrial enterprises of our republic saved during the first half of this year more than 83 million kilowatt-hours of electricity and a large amount of heat energy.

Collectives of the Vilnius Plant for Plastic Products, Klaypeda's Trinichyay Production Association, Akmyantsementasa and a number of other enterprises had worked well. The equipment there was being used productively, technology was being improved, and production was being automated and mechanized. Special commissions were following up on the use of energy. Socialist competition for the economical use of energy was also well organized there, and flexible systems of material and moral incentives for each kilowatt-hour and gigacalorie saved have been introduced.

However, there are still many deficiencies. In August, for example, the ceilings on demand for electricity were greatly exceeded by the Ionava production association Azot, the Kedaynyay Biochemicals Plant and the Vevis grain-products combine. The main causes for overconsumption of energy were poor upkeep of equipment, poor quality of thermal insulation, and so on. Not all enterprises are switching lights off on time, and not everywhere has the setting of norms for the reporting of the use of electricity been arranged.

There are many reserves for savings in agriculture. However, it was noted at the conference that the Ministry of Agriculture still is not adequately monitoring the fulfillment by farms of plans for using electricity. Cases of wastefulness were found at the kolkhozes of Staklishkes in Prenayskiy Rayon, Raudonoyizhvaygzhde in Raseynskiy Rayon, Tverechyus in Ignalinskiy Rayon, and a number of other kolkhozes and sovkhozes.

Electricity is still being used irrationally for the lighting of streets, construction sites, apartment-house entrances, and basements. During the first half of this year alone overconsumption was several million kilowatt-hours of electricity.

The CPSU Central Committee and USSR Council of Ministers decree, "On Strengthening the Work on Saving and the Rational Use of Raw-Material, Fuel-and-Energy and Other Material Resources," requires the rapid elimination of all these deficiencies.

It was emphasized at the conference that it is very important to be well prepared for the coming fall and winter. All ministries, agencies, production associations, enterprises and organizations must execute integrated measures to provide for the normal operation of the national economy during this period and strictly observe the established savings regime.

Ministries, agencies, and city and rayon ispolkoms are obligated to establish monitoring over the observance by associations, enterprises and organizations of schedules for accumulating fuel reserves. All industrial enterprises and organizations should work with regularity during the fall and winter period. Meanwhile, it is necessary to heat apartment houses and production and social buildings and to put heating grids and the delivery of hot water and so on in good order. It is very important that the Ministry of Construction unquestioningly carry out tasks for turning energy facilities over for operation.

The manager of the Industrial Section of the Central Committee of the Lithuanian Communist Party L. Maksimovas addressed the meeting.

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ENERGY CONSERVATION

MOTOR-VEHICLE FUEL TO BE SOLD BY WEIGHT INSTEAD OF VOLUME

Moscow IZVESTIYA in Russian 4 Aug 81 p 3

[Article by V. Azev, doctor of engineering sciences, and P. Chulkov, engineer: "Fuel Must Be Strictly Accounted for"]

> [Text] Technically justified norms for consumption is a major reserve for saving fuel.

Our country has at its disposal great fuel and power resources. But this does not mean that one can be wasteful. In any case, we are speaking about a most valuable liquid fossil fuel.

Almost 90 percent of the country's gasoline and diesel fuel are consumed in internal combustion engines. Their power is 5½-fold that of all electric-power stations put together. And it continues to grow rapidly. In 1980 alone more than 2 million motor vehicles, including 787,000 trucks, were produced in the USSR.

Something else has been calculated. If fuel consumption is reduced by about 1 gram per horsepower per hour, about a million tons of fuel would be saved per year.

While there is no shortage of car and tractor fuel throughout the country as a whole, one can observe long lines of vehicles at filling stations waiting to be supplied with fuel.

On the other hand, the press often reports cases where drivers drain fuel from vehicles into gas cans for personal profit. That is, together with the difficulties with supply that arise periodically, there are also, unfortunately, problems of "surplus" fuel. The latter, of course, is incompatible with the drive to save fuel.

The 26th CPSU Congress set the task of insuring a saving of 160-170 million tons of standard fuel equivalent in 1985 in comparison with 1980. These figures are realistic, and there are reserves for saving.

One of the important sources for saving fuel is daily accounting for it, based upon a unified standard-practices approach to determining the amounts of production, storage, transporting and distribution of fuel during fill-ups, and the consumption thereof in the process of vehicle operation. Meanwhile, there are serious deficiencies in setting norms and accounting for the consumption of fuel and energy resources. For example, the consumption of liquid motor-vehicle fuel is written off in accordance with norms that were approved 6 years ago by USSR Gosplan in liters per 100 kilometers of travel, taking into account the useful work done in ton-kilometers. It is well-known that liters, as volumetric units, can contain various amounts of fuel by weight. Depending upon the components and fractional composition, the average densities of automotive fuel at 20 degrees Celsius are: 700-785 kilograms per cubic meter for automotive gasoline and 790-860 for diesel fuel.

Thus, for example, depending upon the gasoline that is being used, from 29 to 32.5 kilograms of fuel can be written off as consumed per 100 kilometers of run by a fully loaded ZIL-130 truck. If it is considered that the density of the fuel changes greatly with temperature, then during summer operation the consumption of both 28.7 and 33.0 kilograms of gasoline is authorized under existing norms in this case. But how much is really necessary?

In accounting for fuel in volumetric units (liters), the difference between the amounts actually expended and the fuel written off as expended in accordance with the norms adopted for the average automotive enterprise (200 trucks) can be more than 30 tons per month.

All liquid fuel consumption in automotive engines is computed theoretically by unit of weight, while fuel consumption is written off in liters.

Oil supply and marketing organizations receive fuel from the refining industry and deliver it to filling stations in tons and kilograms, but they distribute it in liters, frequently without an indication of the actual weight or even the density.

But the cost of the fuel in retail trade is figured in a volumetric measurement without taking into account the density and temperature at which the fuel is distributed. How much should 100 liters of gasoline cost at a filling station if its weight can be either 69 or 80 kilograms?

Who should answer the question: "liters or kilograms?"?

An answer to this question has already been made: USSR Gosplan has determined accurately that norms for automotive-gasoline and diesel-fuel consumption should be set in kilograms of the fuel actually used. The fact is that this determination has entered firmly into daily practice.

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ENERGY CONSERVATION

AUTOMOTIVE FUEL CAN BE SAVED IF DISPENSED EFFICIENTLY

Moscow TRUD in Russian 28 Jun 81 p 2

[Letter to the editor by P. Ozerov by senior operator of the Novaya Ufa Oil Refinery and Distinguished Oil Worker of the Bashkirskaya ASSR and answer by Deputy RSFSR Minister of Automotive Transport N. Akulinushkin: "Why Rivers of Gasoline Are Flowing"]

> [Text] We oil-refinery workers know well that the state needs fuel. That is why we try to save each drop of crude. Needless to say, this is not easy, and it is all the more irritating to see how the people's property is being squandered. So many times we have observed motor-vehicle engines being operated without a load and parts being washed in gasoline. And there is no little intrigue involved with fuel.
>
> In order to prevent fuel losses, monitoring of its distribution at automotive filling stations must be strengthened and the responsibility of vehicle drivers for its consumption increased. We see a change in the procedure for distributing fuel to AZS's [automotive filling stations], that is, conversion to the fueling of motor vehicles for ready cash, as one of the possible routes toward a thrifty attitude toward fuel and lubricants. In our view, this promises great advantage. Fuel will be saved, not in monetary terms, as now, but in physical terms. The driver will, at all costs, begin to consume gasoline economically. This will yield enormous benefit. What does the RSFSR Ministry of Automotive Transport think about this?
>
> P. Ozerov, Senior Operator of the Novaya Ufa Oil Refinery
> and Distinguished Oil Worker of the Bashkirskaya ASSR

Deputy RSFSR Minister of Automotive Transport N. Akulinushkin answers this question at the editors' request.

"Automotive transport is one of the country's largest fuel consumers. It consumes more fuel than all other types of transport combined. Therefore, the saving of each gram of fuel acquires great economic importance. Our ministry devotes constant attention to questions of increasing the utilization effectiveness of automotive fuel and oil. During the 10th Five-Year Plan 729,000 tons of gasoline and

369,000 tons of diesel fuel were saved. And specific consumption norms for gasoline-burning trucks were reduced by 2.1 percent.

"Workers and specialists are taking an active part in the All-Union public review of the utilization effectiveness of raw and other materials and of fuel and power resources which the AUCCTU, the Komsomol Central Committee and USSR Gossnab are conducting. In 1980 alone 76 percent of the workers took part in this review. More than 220,000 tons of light petroleum product and more than 60 million kilowatt-hours of electricity and many other material resources were saved by implementing just a portion of the suggestions given.

"In speaking about the successes achieved, those deficiencies that Comrade Ozerov writes about in his letter should be dwelt upon. Actually, there are still many instances in the branch where fuel is squandered or used wastefully. The percentage of vehicle runs with no load is still high, and idle time during loading and unloading are great.

"However, today it is necessary to dwell on those questions upon whose solution substantial reductions in fuel losses will depend.

"Great losses occur, for example, because of a shortage of specialized transport. For instance, at present small loads and the output of municipal and domestic-amenity enterprises are delivered not in low-tonnage trucks but in vehicles of medium or high capacity. We receive few trailers and semitrailers. During the 10th Five-Year Plan, for example, we were sent about 60 percent of the required number of trailers and semitrailers for KamAZ trucks. And indeed fuel consumption when performing identical tasks is about 13 percent less for a ZIL-130 truck with two trailers than a truck with one trailer. During the new five-year plan the output of the required number of trailers and semitrailers must be arranged so centralized hauling may be further increased.

"The existing system of material incentives for motivating drivers to save fuel is weak. It is, more precisely, purely symbolic in nature. While paying a driver more than 600 rubles per quarter, the average bonus for saving fuel is 3.2 rubles, and the average amount withheld for overconsumption is 6.2 rubles. USSR Goskomtrud [State Committee for Labor and Wages] should work out a new system of drivers' incentives.

"The problem of developing a network of automotive filling stations must also be touched on. The construction of new AZS's often is begun without coordination with automotive transport organizations. This leads to increased kilometerage by empty motor vehicles to refueling points, since the AZS's are located at great distances from the automotive enterprises. In the future, in order to avoid long empty runs and loss of worktime, this construction and expansion of AZS's must be commenced only with the knowledge of automotive transport organizations.

"Large amounts of worktime and GSM [fuel and lubricants] are lost because of a lack of the required grades of fuel and oil at AZS's. The time has come to make RSFSR Goskomnefteprodukta [State Committee for the Supply of Petroleum Product] pecuniarily responsible for the presence of fuel at AZS's.

"Comrade Ozerov sees a change in the procedure for distributing fuel to all autommotive transport—for ready cash—as one of the possible paths to the thrifty use of

GSM. Such a procedure is realistic, but I consider it more realistic, if the coupon system for dispensing oil products, which has many shortcomings, is to be replaced, that the modern systems for fueling motor vehicles that have been widely disseminated abroad be developed and introduced. In particular, a credit (noncoupon) system of distributing fuel by punched cards or keys with individual memory is of interest. Both of these systems call for the wide use of electronic devices and computer equipment for storing and processing information.

An important portion of the work connected with saving is the use of spent petroleum product. Thus, during the period from 1970 through 1980, the ministry increased 16-fold the collection and turnover of spent oil for reclamation. However, there are considerable reserves for increasing the utilization effectiveness of fresh and spent oil.

"In the first place there is a lack of substantiation of the norms and tasks for collecting oil. In regard to automotive transport, this is because motor oils 'burn' to a great extent during engine operation. Unfortunately, this factor is not considered by planning organs when they set tasks for gathering spent motor oils.

"The existing procedure for obtaining, using, monitoring and accounting for the expenditure of fresh oil and the collection of spent oils should also be revised. Tasks for collecting secondary raw material must be established to take into account the specific peculiarities of the branches of the national economy.

"And still another aspect of the problem being touched on. New types of fuel have begun to be used actively in automotive transport. For example, Glavlenavtotrans [Main Leningrad Administration for Automotive Transport] has started to operate trucks with liquefied gas. This year the experimental operation of motor vehicles that burn mixes of gasoline and methane will start.

"In the not so distant future, automotive engines will operate on compressed natural gas, and also on synthetic fuel that is made from low-rank coal. By using new types of fuel in automotive transport, as many as 20 million tons of oil can be saved nationwide by the end of the current five-year plan. Considering this, the introduction of new types of fuel in automotive transport should be speeded up, especially the use of compressed gas for automotive operations, and Minavtoprom [Ministry of Automotive Industry] must arrange for its production more rapidly.

"The 26th CPSU Congress advanced the task of full and timely satisfaction of the national economy's and the populace's requirements for hauling to one of the most important key directions for developing the country's economy during the 11th Five-Year Plan. In order to accomplish this task successfully, a large number of problems must be solved together with other ministries and agencies. It is with their help that, in the joint search for reserves, automotive transport workers of the Russian Federation intend to carry out successfully the program of the new five-year plan with the least expenditure of resources, including fuel and power resources."

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POWER LINE OFFICIAL'S BONUS REDUCED BECAUSE HE CUT POWER USE

Moscow PRAVDA in Russian 16 Jul 81 p 3

[Article by M. Smirnov, director of the Stupino Power Grid of Mosoblelektro [Moscow Oblast Power Operations Administration] (Moscow Oblast): "You Have Saved? You Will Be Punished"]

> [Text] The manager of an enterprise considers that a burning question of the day was raised in the report, "They Were Punished--for Saving" (15 November 1980). Give him the floor.

The system for planning and evaluating the operation of an electric-power grid and for accounting for and summing up the competition results were subjected long ago to severe criticism in the press and from the rostrums of various meetings and conferences. It pushes power-grid workers into wastefulness and motivates them toward consumption of electricity.

I recall that in the summer of 1975 EKONOMICHESKAYA GAZETA printed a report about a "round-table" meeting on "Evaluation of the Work of Municipal Enterprises." Among those who spoke at the meeting was the chief of Mosoblelektro A. Chernusskiy. He said, in particular: "By reducing losses within in-house power grids, 55 million kilowatt-hours of electricity were saved. But we underfulfilled the plan for sales volume by 33 million kilowatt-hours and turned up among the laggards...." The other "round table" participants spoke about the same thing.

The article provoked responses from readers. I also responded to it--I wrote a long letter in which I supported all the basic principles expressed in this paper. I did not know then that it had set the start for a lengthy correspondence of mine with a number of superior authorities. I persistently defended my point of view, which basically coincided with A. Shernusskiy's position. I could in no way obtain a distinct and precise answer to a completely concrete question: why does such a system of planning and reporting exist and why is it used?

Staff worker Ye. Polyakov of RSFSR Gosplan's Section for Housing Construction and City Services, to whom EKONOMICHESKAYA GAZETA referred my letter, acknowledged that "this question is very serious and requires more careful study from the points of view of both planning organ workers and power-grid workers." I will not describe all the ups-and-downs of the discussion of this question with RSFSR Gosplan. I suppose that I appealed more than once to that authority with a recommendation. In the final analysis, at least at this level, common sense, if it can be called that, partially won. Gosplan agreed to recognize an indicator--sales of electricity in kind, in kilowatt-hours--as a rating indicator but not mandatory for use. But in so doing, it was stipulated that the right to use this indicator remained with the superior organization, in this specific case the RSFSR Ministry of Housing and Municipal Services.

And what about the ministry? It did not agree to convert this indicator from the basic to the auxiliary indicators.

Meanwhile, the possibility of testing the consequences of the planning method's imperfections soon came for me. In April 1978 the Stupino Power Grid did not fulfill the plan for sales of electricity, although all the customers received theirs in full. Instead of praising us for saving and congratulating us on success, we were issued an order that announced to the collective a reprimand for permitting the saving, and I was deprived of part of the bonus. I decided that a suitable occasion had been created for me to bring up again the imperfection of the planning methods used--I sent a complaint that I had been penalized unjustifiably. And I received an explanation from the RSFSR Ministry of Housing and Municipal Services that, "a saving of electricity can be achieved only through omissions of production," and so I had been punished correctly. I was not kept waiting for an answer from Mosoblelek [illegible]. It stated: "...the reduction in your bonus for April (for nonfulfillment of the plan for sales in terms of kilowatt-hours) was made in full accordance with existing regulations about bonus awards."

The letter was signed by the same A. Chernusskiy who once defended exactly the opposite point of view. But, as is evident, a private conversation is one thing, but executing an official duty is something entirely different....

The more energy that customers expend, the more successfully we carry out the plan and receive a bonus....

And so perhaps it is time to put an end to incentives for wastefulness in a most important industry--power engineering.

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NEW APPROACH TO OIL EXPLORATION IN AZERBAIJAN URGED

Baku VYSHKA in Russian 29 Aug 81 p 2

[Article by B. Grigor'yants, chief of the laboratory of the Geological Institute of the Azerbaijan Academy of Sciences and doctor of geological and mineralogical sciences (Baku): "Where to Prospect for Mesozoic Oil"]

[Text] The Main Directions for the Economic and Social Development of the USSR During 1981-1985 and During the Period up to 1990 calls for the Azerbaijan SSR to build up reserves of oil and gas in order to stabilize the recovery thereof. The discovery of new fields of natural fuel, including promising Mesozoic sediments, should play an important role in solving this problem.

Prospecting for oil and gas deposits in Mesozoic sediments in Azerbaijan has been going on since the end of the 1940's. Unfortunately, the complex of geological and geophysical studies, including deep-well drilling, that has been conducted precisely for this purpose still has not produced any important results. However, based upon these studies, the causes of the clear lack of correspondence between the fairly large amount of prospecting work and the practical yield thereof can be revealed and recommendations made for the future direction of exploratory work.

Studies associated with solution of the problem of Mesozoic oil have been conducted mainly within the southeastern end of the Greater Caucasus, a substantial amount of the prospecting and exploration that were conducted in the 1950's and 1960's having been concentrated in a region where the Mesozoic sediments emerge directly at the surface, and then later were concentrated on prospecting for fuel in adjacent areas of deep deposition of these sediments.

A review of the area of prospecting and exploration seemed to be completely justified. And now these regions are, as before, being viewed as extremely promising. The Mesozoic complex of sediments there has been covered over by younger formations, and there is every reason to count on the presence of oil and gas deposits in them. At the same time, prospecting in and of itself in such regions is complicated considerably because of the need for investigation of the structure of the promising sediments under thicknesses of rock often measured in thousands of meters. It is clear how important the selection of areas is when prospecting and exploring for oil and gas in Mesozoic sediments. But this depends primarily upon our notions about their structure.

An important place in the forming of these notions is assigned to geophysical exploration. In the southeastern Caucasus environment, the results that can be obtained by seismic exploration are more interesting in this regard. Sufficiently reliable conclusions can also be drawn from the data of a gravimetric survey. However, the geologists have serious disagreements on the question of using seismic and gravimetric exploration for these purposes.

In order to investigate them, let us examine the results of the geological and geophysical work that is associated with prospecting for oil and gas deposits in Mesozoic sediments. In the Caspian-Kuban' area the Mesozoic sediments are characterized by relatively shallow deposition in the Yalama and Khudat region. However, it has not been possible to observe commercial accumulations of oil and gas here. In the Kusany and Divichi region the structure of Mesozoic deposits remains unstudied despite much deep drilling done there.

The results of drilling holes within the petroliferous Apsheron area indicates depths of Mesozoic sediments on the order of 1-5 kilometers in the Caspian waters and to the north of the Apsheron Peninsula, and deposition at depths greater than 5-7 kilometers in the main southern part of the peninsula. Thus, drilling in the Shemakha-Kobystan zone and the southwestern Apsheron has proved to be completely without results. And in the various instances where hole depths were about 5 kilometers or more Mesozoic sediments could not be found.

The thickness of the various horizons of the upper complex of sediments, which exceeded severalfold those hypothesized, proved to be the main cause of the results of deep exploratory and appraisal drilling that were, at first glance, so unexpected.

It stands to reason that it would be difficult to foresee this possibility in the initial stage of prospecting and exploration (20-30 years ago).

But today the causes of the errors can be formulated as follows. The fact is that, when the seismic data for the Shemakha-Kobystan and Caspian-Kuban' regions were processed, the methods used were the same ones applied to the Apsheron petroliferous area. But in these areas, the geological environment proved to be different, more complicated, and this had not actually been considered during processing of the seismic data.

Another important circumstance that played a negative role was the supposition that there was conformity in the folded structure of the overlying Cenozoic and Mesozoic sediments. However, another opinion exists in science: about fundamental differences in the structure of the Cenozoic and Mesozoic sediments. Its correctness has been confirmed to a definite degree by the results of deep prospecting and appraisal drilling.

In my view, the second point of view characterizes more accurately the complicated picture of the geological structure of the Southeastern Caucasus and explains the potential for sharp changes thereof. Unfortunately, this phenomenon was not actually taken into account when points for sinking holes weere chosen. But meanwhile it has been confirmed by drilling in the Chukhur-Yurta region and the Astrakhanka area.

It seems to me that the Ministry of Oil Industry and Azneft' [State Association of the Azerbaijan Oil Industry] should take practical steps to check the possibility of discovering Mesozoic sediments at depths on the order of 3–4 kilometers in the Kobystan section, where drilling has not been done yet. Confirmation of the correctness of the hypotheses expressed can be of important assistance in choosing the correct direction for prospecting and exploration in similar areas, particularly in West Azerbaijan.

A stipulation is necessary here. The Mesozoic complex of sediments in Azerbaijan must not be approached with the same criteron that was applied to the productive strata of the petroliferous Apsheron area or the Baku Archipelago. In the log of the Mesozoic sediments there are actually no thick reservoir formations that are characteristic of it. Obviously, we encountered in their log a completely different nature of oil and gas saturation. A completely probable confinement of oil and gas deposits to the zones of the fragmentation of rock is presented here. There are just such types of fields in Siazan' and, apparently, in Muradkhanly and Zardob. Consequently, there is every reason to believe that such accumulations of fuel will be detected in those parts of our republic that I have mentioned above and the tasks assigned to Azerbaijan's oilfield workers by the party and the government will thereby be solved successfully.

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STATUS OF ERECTION OF MUBAREK GAS-TREATMENT PLANT OUTLINED

Tashkent PRAVDA VOSTOKA in Russian 2 Aug 81 p 1

[Article by M. Karamov, Yu. Kruzhilin, V. Petrov and V. Shumaylov: "The Decisive Days and Hours"]

> [Excerpts7 A report of the correspondents' center for SOVET UZBEKISTONI, PRAVDA VOSTOKA and UzTAG [UzSSR Telegraphic Agency].
>
> Not everything has gone smoothly, and it has cost much effort to maintain the pace set by the commitments. And not always has there been success. But even so, several large facilities of the Mubarek gas complex have come straight up to the finish line. They should be turned over for operation in the near future.

The Compressor Station

Five high-powered pumping machines, each rated at 11 million cubic meters of gas per day, will take gas from the plant and transmit it to the trunk pipeline. Installation of the equipment at the compressor station has been almost completely finished, including the turbocompressors, the dust collectors, and all kinds of instruments for monitoring and control. Water has been delivered to the station for hydraulic tests: a check on the quality of the welding and insulating work has commenced.

Unit No 2

Having completed work on the new gas-field installations, troubleshooters are being transferred to the plant. Additional "masters of the startup business" are arriving from various parts of the country. Chief troubleshooters from Volgograd--representatives of the supplying plant--are starting work at Mubarek.

The phase that is most important right now--the erection of unit No 2 of the third phase of the gas-treatment plant--is still being completed. Installations for scrubbing 1.5 billion cubic meters of gas per year have been almost completed. Ten days of work remain. Workmen of Administration No 9 of Sredazneftegazmontazh [Central Asia Trust for the Installation of Oil and Gas Industry Equipment] are completing the welding of the complicated system of pipes, insulating them and concealing them in housings, and assembling the last pump.

The job is going on full blast, but there is a risk of delay. Because of a poorly thought-out schedule for time off, the number of installers has been reduced during these feverish days at the facility, which is due for early startup. There is practically no two-shift work. The slightest trouble occurs and the startup has to be put off.

The shortage of wooden parts for the new section of the cooling tower, without which the gas cannot be scrubbed, causes anxiety. These parts, which were sent from the Takhiatash Constructional-Structure Plant, "got lost" somewhere on the railroad.

The Steam Boiler

An installation for producing 75 tons of steam per hour is ready for startup and setting-up operations. Electricity has been delivered to the boiler's instruments and equipment. In the next few days rinsing of the boiler will be started, after which it will be dried out and kindled.

Along with the boiler, the prime contractor--the mechanized column of Uzbekgidroenergostroy [Trust for the Construction of Hydroelectric Facilities in the UzSSR]--should turn over the system for condensing spent steam. There will be a delay in operations here: a shortage of lifting mechanisms has turned up. A Mubarek plant that has a high-powered crane at its disposal should help the builders, but it is in no hurry to do so. Meanwhile, time for getting started no longer remains. The operating boiler should be presented to the state acceptance commission no later than 10 August.

The Kuyumazar-Mubarek Waterline

The line has been filled with water and, although "nonscheduled" pumps of reduced capacity still stand on it, it could be turned over to Mubarek for at least a little badly needed water....However, the installation of chlorinators has been delayed. Serious difficulties have arisen in connecting it to the power grid.

A Battle Against Work Not Done

Builders of the Mubarek complex have declared a decisive battle against work not done. And there is much of it. Communications along the waterline still have not been arranged. In places, temporary supports stand here and here instead of permanent ones. Arrangements for electrochemical protection of the pipe against corrosion have been delayed. The laying of 10-15 meters of sewer pipe was forgotten....

After the Criticism

The supplying of Mubarek workers with foodstuffs has improved somewhat. Trade in vegetables has been opened up: people are buying onions, apples and melons. The URS [Workers' Supply Administration] of Soyuzuzbekgazprom has shipped potatoes of the new harvest from Tashkent. An artificially created "shortage" of macaroni, confectionery products, canned goods and salt has ceased. However, one still hears about incomprehensible shortages of, for instance, cottonseed oil, of which, as is well known, the republic is not experiencing a shortage. The supply workers' foggy explanations that, they say, "Oil in drums is difficult to bring in, and there are few funds for bottled oil," are not convincing. If they want to work in earnest they must overcome difficulties and take an example from the builders and installers.

The shortfall in deliveries of foodstuffs and other necessary commodities in daily demand to Mubarek by Kashkadar'inskaya Oblast trade organizations continues. The funds allocated to sections for workers' supply are not being completely used to fill orders, despite repeated press reports and appeals of the builders.

The time evidently has come for the republic's Ministry of Trade and the Kashkadar'inskaya Oblast party committee to intervene. The supplying of Mubarek workers is changing for the better, but this process must be accelerated.

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GREMIKHINO OILFIELD IN UDMURTIA BEING DEVELOPED

Moscow PRAVDA in Russian 9 Jul 81 p 2

[Article by A. Artamonov (outside PRAVDA correspondent) (Gremikhino, Udmurtskaya ASSR): "Gremikhino's Contribution"]

> [Text] The first tons of "black gold" from a new field in Udmurtia arrived not so long ago. They called it Gremikhino, the name of a small village situated in Votkinskiy Rayon. The village is small, and its name [thunder] has proved to be symbolic. The fame of the new field is being thundered throughout all of Udmurtia.

This deposit lies under fields that belong to a school farm. Anyhow, the oilfield workers occupied mainly a ravine and a copse, which were not suitable for cropping. On 14 May the brigade of experienced foreman Honored Oilfield Worker of the USSR Vadkil' Gaynullin began drilling here. On 31 May the 1,189-meter level was reached and an oily formation discovered. Then the brigade transferred to the next hole.

All 20 people worked here energetically and with enthusiasm. They wanted to make up for shortfalls of earlier months. The drill rig got to Sarapul during the high waters of spring. The work hands yearned for a real job, and it was not necessary to remind the brigade leader and his closest helpers—Vitaliy Zhelyabin, Vyacheslav Turbin, Rafat Sammatov and other drillers—that the deadlines for the work were very short. Penetrating speed reached 3,726 meters per rig per month versus the 2,500 meters of the plan. Another brigade got off to a good start—the brigade of drilling foreman Vladislav Telyatnikov.

The Gremikhino field is not ordinary. The crude here is highly resinous and viscous. The depth of deposition of the formation is comparatively great. It became necessary to apply one of the enhanced-recovery methods—injecting steam at a pressure of 120-160 atmospheres and a temperature of 340 degrees.

It must be said that the method of stimulating the formation with heat still is not being used very widely and it harbors the unexpected. It was possible right at the Gremikhino field to take samples thoroughly and on a broad scale and to study the new technology, gain experience, and then introduce it at other fields. But the assistance of the USSR Ministry of Petroleum Industry and of the All-Union Science and production association (Soyuztermneft' [State Association for the Application of Thermal Methods to Enhanced Oil Recovery]) is necessary for this purpose. Special equipment is required. There is none of this yet.

Udmurtia's oilfield workers also encountered other difficulties: there is not enough equipment and the roads in the area are poor. High-quality pipe, special cements and equipment for preliminary tension of the strings are needed for conducting an experiment. This year alone 31 wells are to be drilled here.

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USINSK OILFIELD DRILLERS BOAST OF GOOD RESULTS DESPITE POOR SUPPORT

Moscow PRAVDA in Russian 12 Aug 81 p 2

[Article by N. Stepanov, driller and delegate to the 26th CPSU Congress (Usinsk Settlement, Komi ASSR): "Difficult Formations of the Reserves"]

/Excerpts/ Workers of the Komineft' [State Association of the Komi Oil Industry] production association entered the new five-year plan with good morale. And there were reasons for this: we had worked well and all tasks had been completed ahead of time. And we Usinskers have a double joy--Usinskneft' [Usinsk Oil and Gas Recovery Administration] has been awarded the challenge Red Banner of the CPSU Central Committee, the USSR Council of Ministers, the AUCCTU and the Komsomol Central Committee.

Our brigade worked well last year in plumbing the depths of the Devonian at the Usinsk field. We carried out the annual socialist commitment for penetration on 7 December, and we drilled, in all, 1,312 meters of hole in addition to the goal. And the cycle of this drilling work was cut versus the standard by a whole month.

How were the high indicators achieved? It is difficult to answer this unambiguously. The use of new types of bits, calcium-lime and potassium muds and new rigging for casing strings, and an increase in rotary-drilling volume helped. But competition under the slogan, "Put the oil wells to flowing!" brought especially great benefit, in my view.

We discovered our internal reserves, studied them well and right now are bringing them into action. But our subcontractors, on whom overall success also depends, did not, unfortunately, hurry to follow our example. So it is these deficiencies that I would like to dwell on. For example, we began to work with new AN and AV type bits with an oil-filled bearing. It is a good tool, penetration with it is 1½-fold to 2-fold higher than with ordinary bits. But it is a pity when the bits arrive without oil. Meanwhile, lowering a faulty tool into the well means real trouble. Much in the way of money, time and material resources are spent to eliminate it, and, in the final analysis, this leads to a reduction in oil recovery.

We also have major complaints against the manufacturers of drill pipe and casing, the quality of which leaves much to be desired. For even one casing with a small defect can lead to a serious accident and cancel out many months of effort spent on construction of the hole. I consider that Komineft' Association makes inadequately rigorous demands on suppliers for failure to meet shipment deadlines and for poor quality of the equipment manufactured.

The lack of all-weather roads, especially in new regions, causes great harm. Here is a typical example. About 2 years ago our colleagues in Administration No 3 undertook to drill over a Permian-Carboniferous deposit of the Vozey field. But after a certain time practically all the work there had to be stopped because the builders of SU [Construction Administration] No 924 of Permdorstroy [Perm' Road-building Trust] could not lay a road to there.

At times we curse the automotive transport workers for the fact that they do not always allocate us enough equipment for carrying out various operations. And this detail is explained here: on the whole, there is enough machinery but not enough of it is in good working order. The fact is that the design of the machinery does not give due consideration to working conditions in the Far North, and indeed they are very complicated—ordinary machinery does not withstand our cold. For a long time now we have raised the question that specially adapted machinery and equipment should be manufactured for regions with severe climates, but our requests still have not been heard.

I believe that the solution of these problems will help in speeding up the development of northern oil and gas fields and successful fulfillment of the tasks of the new five-year plan.

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WAYS TO IMPROVE OIL SUPPLY AND MARKETING SUGGESTED

Moscow MATERIAL'NO-TEKHNICHESKOYE SNABZHENIYE in Russian No 6, 1981 pp 33-35

[Article by N. Stramtsov, director of the Central Design Office ASUnefteprodukt, M. Kuz'menko, deputy director, and L. Timonov, head of the department: "A Single Master for the Oil Supply"]

[Text] The extant system of supplying the national economy with petroleum products has the following organizational subdivisions: Soyuzglavneft' [Main Administration for Supply and Marketing of Petroleum and Petroleum Products] under the USSR Gossnab, the republic administrations under the councils of ministers of the union republics, local territorial administrations in the economic regions and oblasts of the RSFSR, Ukrainian, Kazakh and Uzbek SSR, as well as the bulk plants.

The Soyuzglavneft' bases its activity on the developed balances and plans of inter-republic supplies. It supervises and organizes shipments to the union republics, based on exports and the national needs. The shipments are planned and the supplies are controlled by the republic agencies through territorial administrations, filling stations, bulk plants and gas stations.

Such dispersion of functions, the lack of a unified financial and technical policy, and unequal material interest in the results of activity of different links reduce the efficiency of the supply system. This can be eliminated by creating supply and marketing associations similar to those which are successfully operating in industry, construction and other spheres.

The time has come to also form a unified, all-union cost accounting organization, an association set up on the principle of a three-link system of control: all-union association-republic or local territorial administrations-bulk plant.

In our opinion, it is expedient to expand the functions of the association in solving the main tasks of the material and technical supply agencies, detection of the needs of the national economy for petroleum products, their realization and monitoring the fulfillment of the supply plans. The oil marketing association in this case will appear before the USSR Gosplan and the USSR Gossnab as the fund holder, and before the consumer, as the country's only supplier of oil products.

In this case there could be requests for oil products from the consumers in the oblasts, krays, and republics sent through the bulk plants, territorial administrations, control apparatus of the association and to the higher planning agencies, by-passing the traditional stream of planning documents through the departmental channels.

The workers of the local oil marketing organizations know better the actual demand for the products, and most important, the situation with the resources in the given region than the ministries and departments, the fund holders. Therefore rapid regulation of the shipments of oil products and their supplies to the consumers (regardless of departmental subordination) by optimizing the marketing reserves will guarantee greater reliability of oil supply. With correct organization of supply, this not only will not create difficulties, but will even considerably reduce a certain season shortage of oil products. This system will reduce the number or abolish altogether the subdivisions involved in questions of oil supply in the ministries and departments, the fund holders.

According to preliminary estimates, the suggested redistribution of oil supply functions will reduce the volume of planning and accounting information in the consumer-planning agency system, the number of numerical signs by 1.7 billion, and will release over a thousand people. In addition to reducing the number of managerial personnel and improving the reliable oil supply through centralization of the planning and control system, the creation of a supply and marketing association and the optimal planning of petroleum product shipments in a unified agency will diminish the transportation expenditures on the whole for the country by 30-35 million rubles per year.

Currently, 77 krays, oblasts and autonomous republics of the RSFSR provide petroleum products to 51 administrations of the RSFSR Goskomnefteprodukta [RSFSR State Committee for Petroleum Products]. The gross turnover of the administrations fluctuates from 0.6 million (Novgorod) to 58 million tons (Bashkir). In this case, the number of personnel in Bashkiria is 5-fold greater than in the Novgorod administration with the same wages fund per person. The indicator adopted in the system of oil supply for "realization for one person" makes it possible to evaluate the organization and productivity of labor. Thus, realization for one worker in the Novgorod administration is 18-fold lower than in the Bashkir administration. Naturally this ratio of indicators for the activity of the territorial administrations raises great doubts in the efficiency of the established order. Each territorial administration generally supplies petroleum products to one oblast, kray and autonomous republic. At the same time, there are administrations that supply from two to six oblasts.

There is a considerably higher reliability of supplying the consumers in the large administrations because of the more flexible maneuvering of resources and rapid control of the shipments than in the "dwarf" oil marketing administrations. Under these conditions, the conclusion is raised that it is necessary to enlarge the territorial administrations and expand their sphere of activity in the form of formation of regional oil marketing associations.

In our opinion, it is expedient to set up 12 of these associations in the RSFSR to serve five-seven oblasts, krays and autonomous republics each. There are currently 12 computer centers operating in the oil supply system of the Russian Federation which are capable of collecting and processing all the information materials on organizations of oil supply included in the area of servicing of the region.

The Central Design Office of ASUnefteprodukt [Automatic Control System of Petroleum Products] has computed the economic effectiveness of setting up regional associations in the central Chernozem oblasts. The results indicated that creation of the association on the basis of the Voronezh, Belgorod, Lipetsk, Kursk, Orlov and Tamob territorial administrations of the RSFSR Goskomnefteprodukt will produce 0.5 million rubles of saving every year because of optimized planning of shipments and supplies, and in this case, release of about 100 people engaged in manual information processing. On the whole for the Russian Federation, 6 million rubles of saving and release of over a thousand people can correspondingly be attained.

In addition to freeing specialists from manual processing of information and drastic improvement in labor productivity based on automated control system of oil supply which permits 80% mechanization and automation of processing of planning and economic, and scientific information. Creation of regional oil marketing associations will permit a 10-15% reduction in the trade-managerial expenditures, and 3-4% reduction in the experditure for intraregional truck shipments because of optimal planning and control of the supplies (this is roughly 6-7 million rubles per year). In addition, the reliable supply to the national economy of petroleum products will be significantly improved because of optimized control of reserves and rapid maneuvering of the resources. The volume of planning, operational, computation and accounting information will be reduced 4-5-fold in the link: regional association-all-union association. The maximum loading of the computer equipment will be guaranteed, and naturally, the net cost of data processing will be diminished.

We have attempted to mainly examine the questions of conservation of labor in the system of oil supply through creating supply and marketing associations. However, this problem is more multifaceted. The development and introduction of an automated control system for oil supply makes it possible to significantly improve the indicators for the functioning of the enterprises and organizations in the related branches of the national economy. Optimization of planning and control of petroleum product shipments by all types of transportation, optimization of the location of the bulk plants ard gas stations, acceleration of the time of mutual information exchange, and solution of other problems on the computer will make it possible to solve a number of transportation problems. The average distance of a run for the rolling stock will be reduced, its turnover will be accelerated, and consequently, labor productivity will be increased of the transportation workers and capital investments will be reduced for the transportation and bulk plant operations of the consumers.

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PERSONNEL OF DAGESTAN'S NEW GEOTHERMAL INSTITUTE DISCUSS THEIR MISSION

Moscow TRUD in Russian 29 Jul 81 p 3

[Article by A. Mostovshchikov (Makhachkala): "The Heat of the Earth's Depths"]

> [Text] The country's first Institute for Geothermal Problems has been established at the Dagestan Branch of the USSR Academy of Sciences. One of the main tasks that face the new scientific collective is to work out the problems of using the heat of the earth's depths in the national economy.

We are standing near a geyser and listening to its businesslike grumbling: "Bop-bop-bop." The stream spurting from below the ground is not high but it is full of energy, and, like Kamchatka's attractions, it does not ask to have its picture taken but has to be watched; moreover, its temperature is getting on to 140 degrees. The place is reminiscent of a Martian landscape--everything here is from underground, congealed with a yellowish-rust incrustation. And in the distance the daubed cottages of Tarumovka--a village laid out in the steppe north of Terek back in the 18th century by fugitives--whiten the green background.

Not every Tarumovka resident knows the details of his village's history of the distant past. But the events of the past decade are alive in the memories of many. On a hot summer during that period, Tarumovka well No 1, which had been drilled for oil, suddenly discharged a clayey solution, followed by a gusher of hot water.

"It went up about 100 meters," recalls chairman of the local village soviet Vladimir Il'ich Stepanov. "And it was howling...."

The well was subdued and converted to a geyser regime. And not for the exotics of its speech. In order to keep 85,000 tons of standard fuel equivalent per year from being poured out in vain, it was decided to create here the Tarumov Power-Engineering Complex. A geothermal electric-power station, with a capacity in the long term of exceeding 400,000 kilowatts, is one of its facilities. And a plant will be erected beside it where valuable metals found in the water will be extracted. The new institute will make the feasibility study for this unusual construction project. This is one of the many tasks assigned it in accordance with its rights as a pioneer.

"Why did the choice fall on Dagestan?" Institute director Doctor of Geological and Mineralogical Sciences Vitaliy Vasil'yevich Suyetov went up to a map of the republic. "Because at practically any point on our Caspian shore, one can, without getting into the depths, drill a well and get to water with a temperature of up to 200 degrees. Who were among the pioneers in the use of the earth's deep heat? Dagestan's power engineers."

And here are some more facts and figures. Right now a substantial portion of the explored reserves of thermal water is being used in various branches of the republic's economy. About 20 percent of Makhachkala's apartments, a substantial portion of those of Kizlyar, and all of them in Izberbash are heated by hot underground water.

A million kilowatts is not the maximum for geothermal electric-power stations, Suyetov told me, not without some pride, during a conversation. But the journalistic memory, as if by habit, recalled from a number of advertisements that renewable sources of energy--wind, solar, and tidal electric-power stations--can be used. It goes without saying, it would seem that there are savings of valuable raw material and fuel, convenience, and preservation of the environment of course. But how feasible is all this on a large scale? Indeed, the first geoTES [geothermal electric-power station] was built in Italy in 1914. But since then little has been heard about it.

"That is not entirely so," my collocutor corrected me. "Let us say that in 1977 the capacity of all the world's geoTES's that had been built in Italy, the USA, New Zealand, Mexico and Japan exceeded a million kilowatts. In Reykjavik, Iceland's capital, you will not see one smokestack: why have boilers when there is a sea of boiling water under your feet? In Hungary 360 hectares of greenhouses are heated by thermal water. On Kamchatka our Pauzhetskaya geoTES, with a capacity of 5,000 kilowatts, has been operating for more than 10 years.

"People are in earnest in getting ready to pick the key to the earth's thermal storehouse. In the year 2000 stations of 20 million kilowatts of capacity in the United States and 7 million kilowatts in Japan should be producing current. This is comparable with large hydroelectric and thermal electric-power stations. Furthermore, the wind cannot be harnessed everywhere by far, the sun will turn turbines only in the south in cloudless weather, but underground heat basins are everywhere--even under Tyumen' and Omsk, Ulan-Ude and BAM [Baykal-Amur Mainline] settlements...."

Chairman of the Kizlyarskiy city ispolkom Vladimir Nikolayevich Avrashko told in detail about his city, which is well known for many famous things, and where, by the way, the well-known military leader Bagration was born, and wine and cognac well known throughout the whole country are produced. But we are concerned about something else: how does a city's heating system work when you see no smokestacks in the central part of the city?

"Our boiler stacks do not actually smoke," said Avrashko. "But, on the other hand, there are enough other stacks above the ground."

Actually, Kizlyar's heating system reminds one of a design by the well-known George Pompidou Arts Center in Paris: many heating lines ran not where they usually run but were put on display.

"These thermal waters are cheap," sighed Avrashko, "but they are very aggressive: you do not have time to change the pipes. We have just now learned to deal with the salts that are deposited on the pipes' walls and start to corrode them—it turns out that bacteria are the guilty parties. Now we have found a way out: we install heat exchangers at one of the wells. The thermal water will heat fresh water, and that will go along the pipes."

I recalled that corrosion had been complained about at Teplichnyy Sovkhoz in Makhachkala and so I decided to have a conversation with Candidate of Geological and Mineralogical Sciences Magomed Kurbanovich Kurbanov, manager of one of the leading sections of the institute—the hydrogeothermal section—not about long-range prospects but about this question, which disturbs customers for deep heat.

"Of course, finding a method for dealing effectively with corrosion is one of our main tasks," said Kurbanov. "But the way to solve this problem depends not just upon the scientists. Experience indicates that there will be no corrosion if a heat-supply system is airtight.

"But do not forget that our institute is an academic one. And among the problems that we are studying fundamentally with first priority is power from intense geological processes. According to a hypothesis worked out by institute workers, water at a temperature of more than 100 degrees should be found in large amounts in regions where the foci of earthquakes are not so deep. The next stage is to prospect for and map these underground stores.

"The development of feasibility studies for the construction of geoTES's with capacities of up to a million kilowatts and of systems for supplying heat for cities, villages and agricultural complexes also is our job. Let us say that the turbines of such electric-power stations can be turned directly by steam, into which the high-temperature underground water is converted at the surface. And if the water is cooler, it yields heat to a substance that will boil at a below-freezing temperature, such as freon, which operates household refrigerators. There is still another method: to remove the heat from deeplying dry rocks. In one method, ordinary water is injected into a hole from the surface, and it is heated there and then raised to the surface through another hole. Such a system is already in operation in the USA. In Dagestan, there is the Berikeyskoye oilfield, which is no longer in operation. It is a similar system, but a natural one. We are beginning our research at this testing place."

A story about the problems of using geothermal energy in Dagestan would be incomplete without mentioning the chairman of the republic's Gosplan, Abdulla Gadisovich Gadzhiyev, who is in charge here of the Coordinating Council on Renewable Energy Sources. Much effort has been expended on organizing the republic's new mission, convincing skeptics, and inspiring enthusiasts.

Tarumovka's geyser continues its spouting. But not far away the drill of the installation that is fated to make a start on a new complex has gone into the ground. The geyser will not heat the sky much longer.

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EXTINGUISHING OF OIL-WELL FIRE IN FEDOROVSKOYE FIELD RECOUNTED

Moscow IZVESTIYA in Russian 13 Aug 81 p 4

[Article by Yu. Perepletkin (Surgut-Tyumen'): "An Attack on the Flames"; passages enclosed in slantlines printed in italics]

> [Text] This occurred at the Vostochno-Mokhovaya oil-bearing area of the Fedorovskoye field, almost 120 kilometers from Surgut. A strong rumble, like one from an earthquake, was heard at the drilling site for well No 105 and smoke appeared. And then a pillar of fire suddenly rose up.

There were no people at cluster No 105. The drilling of the 16 wells that had been planned there was completed, and half of them were already operating, yielding crude in good order. Eight "little spruce trees"—this is what the oilfield workers call the surface fixture that is made up out of the pipes through which the earth's blood pulsates—had sprung up in a row. Another 8 wells that had not been finished off yet and were temporarily closed by plugs without fixtures, were located 50 meters from the first group. Above the last well stood a drilling derrick: it was to be dismantled soon and transferred to a new place.

On that day casing-head gas tore out under enormous pressure, the gusher sent metal parts flying, striking sparks, and fire burst out....A threat hung over the structures, which had been built with such difficulty. When the first firefighting subunit arrived, the flame lapped above the depression like a fantastic sail with a deafening roar, breaking through the heap of bent metal structure. A wave of fire greeted the people, who were several hundred meters from the gusher. Later, the documents said, with the dryness of officialese:

/"The gas was discharged at about 1.5-2 million cubic meters per day. The gusher was a dispersed pulsating flame, light yellow with a small amount of smoke. The flame was 30-35 meters high and 15-20 meters wide...."/

It was impossible in that situation to identify the place from which the gas was escaping: from the last, the eighth, well, from the seventh, or from both of them at once. Before extinguishing the fiery whirlwind, the heap of intertwined, twisted metal would have to be torn apart. One derrick alone was more than 50 meters long, and the whole installation weighed about 600 tons. Moreover, there was a large reserve of drill pipe softened in the flames. The pipes were converted into a pile of metal spaghetti.

The operation from the first moment was put in the strictest order. A staff headed by Surgutneftegaz [Surgut Petroleum Recovery Association Deputy General Director V. Sabirzyanov was established. Lt Col of the Internal Service A. Velizhanin, deputy chief of the firefighting administration of UVD [Internal Affairs Administration] of the Tyumenskaya Oblast ispolkom, was in direct charge of eliminating the burning gusher.

First of all, it was decided to protect the eight operating wells--indeed, they were the ones closest to the fire! The delivery of crude was cut off, and bulldozers, pouring water from several fire-hose barrels, began to cover the "little spruce trees" with sand. Five hundred cubic meters of earth were needed to cover them to the very top, to protect them completely. This was the first great success: for each well is, you consider, a million rubles.

The water came by hose from streams 300 meters away, which could yield only about 80 liters per second. The staff made a decision: make a dike with fill and create a water reserve. And, moreover, lay a pipeline from the system for maintaining formation pressure. For this purpose, it was necessary to overcome about 5 kilometers of swampy ground, but then the problem of feeding water was eliminated completely.

Nizhnevartovsk sent two high-powered turbine installations--gas-and-water extinguishing units. Specialists were summoned from Nefteyugansk, Otradnyy and even Baku....This unique operation required this scale of assistance.

After flying in from Tyumen' with a group of his most dependable coworkers ("I have already dealt with more than one fire with them"), A. Velizhanin took charge of protecting the people who arrived for the main stage of this operation--freeing the well mouth of the metal structure. Yu. Seliverstov, from a subunit for the prevention and extinguishing of fires of the Eastern Industrial Region, supervised these operations. So many variants were tried! They tried to use a hitch from 6-8 tractors, but the thickened cables melted in the flames. Using a water barrier, gas cutters tried to cut the heated iron beams up into pieces, but that did not work.

Three days passed, then five, and ten....Laying of the water line was completed, and a set of pumps and a Sputnik metering installation were successfully disassembled into parts and taken away to a safe place. The pile of metal above the center of the raging fire began to get smaller and smaller.

The 18th day came....

The reports said:

/"A coupling from 7 tractors dragged the remnants of the drilling equipment aside. The gusher at once became more compact and tended to shoot straight up. The flame was bright and clean, and there was no smoke. The noise increased. The flame was more than 50 meters high and 8 meters wide."/

One after another, streams of water played on the fire. An enormous tongue of fire blazed in puffs of steam and vanished....Finally things became quiet. It was so unusual to hear the mild noise of engines, people's voices, the gurgling of water in hoses....

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WATER JET BEING TESTED FOR USE AS COAL-MINE TUNNELER

Moscow IZVESTIYA in Russian 13 Aug 81 p 2

[Article by N. Lisovenko (Selidovo, Donetskaya Oblast): "Through the Earth"]

> [Text] Deep in the earth, in the drift of an underground coal mine, shots ring out from time to time as if someone were firing a gun. A water jet is operating—a new machine created by Soviet specialists.

Novosibirsk scientists proposed to use water discharged under great pressure for penetrating mine workings. The idea arose of creating a water jet. And Dongiprouglemash [Donetsk Branch of the State Design, Development and Experimental Institute for Coal Machinebuilding] created such a machine—an interesting, comparatively simple and convenient machine. It is being used at the Underground Mine imeni Korotchenko in Selidovugol' [Selidovo Coal Mining Association] in the Donbass [Donets Coal Basin].

The new unit looks as if it were a hybrid of an underground-mine loading machine on a crawler chassis with a manipulator that reminds one of an oblong container. From this container, 1,200 grams of water fly out at a pressure of 8,000-10,000 atmospheres. The speed of the stream at the moment of its ejection exceeds 1,000 meters per second, and its impact power at a distance of 2 meters easily breaks through a steel sheet half a centimeter thick. In a minute it produces 10-12 such shots.

"This machine conquers the strongest rock," says deputy chief engineer of the mine V. Suchenko. "It does not fill the mine's air with dust, it is safe in a gassy mine, and it is not complicated to operate...."

The innovation has been given the designation KIV—tunneling cutter-loader with pulsed water jet. In the specialists' opinion, it can deal with rock of any hardness, break up outsize rocks in stone quarries and destroy old foundations where explosives cannot be used. It can remove old refractory linings in metal smelting units and do many other things.

During tests at the Underground Coal Mine Korotchenko the KIV drove a gallery 115 meters long in rock which, without any exaggeration, can be called whetstone rock—it was so hard and abrasive. In one shift a high pace was achieved: 1 meter of shaft penetration. With this productivity, use of the KIV will be economically advantageous.

The miners are expressing the hope that Dongiprouglemash will speed up completion of the tests. The new machine, incidentally, has already been patented in many countries, and it should come to the aid of ore-mining enterprise builders as soon as possible.

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BAKU MACHINEBUILDERS CREATE OIL-WELL STUDY UNIT AHEAD OF SCHEDULE

Moscow PRAVDA in Russian 29 Aug 81 p 2

[Article by L. Tairov (Baku): "For Tyumen' Oilfield Workers"]

> [Text] A test model of an LS-6 installation for studying wells has been created ahead of schedule at the Machinebuilding Plant imeni Kasimov, and it is intended for Siberia's oilfield workers. It was manufactured in accordance with a design of the Azerbaijan Scientific-Research Institute for Oil Machinebuilding.

Tests of an installation for the study of oil wells that has been created in Baku have indicated that it possesses high off-the-road capability and will enable wells up to 7 kilometers deep to be studied, whereas previously produced installations were designed for 4,000 meters.

Right now plant personnel are sending more than half of their output to Tyumen'. This includes tank trucks and circulation and other units. This year's commitments required that Siberia's oilfield workers be furnished 4,000 rubles' worth of output above the plan, with the share of articles with the Emblem of Quality to be brought up to 45 percent versus the 38.2 percent planned. But already, in 7 months, 374,000 rubles' worth of output above the task has been realized. The share of articles with the Emblem of Quality is 50.4 percent.

The collective of another enterprise of Soyuzneftemash [All-Union Association for Oil Machinebuilding]--the Kishli Machinebuilding Plant--has sent the Siberians high-capacity tractor hoists on time. At the Plant imeni Leytenant Shmidt the country's first automatic line for the mechanical machining of sucker-rods, which are being awaited in West Siberia, are being introduced.

Competition under the slogan, "Fill the Siberians' orders ahead of time," has been especially intensified since publication of the CPSU Central Committee decree about the initiative of the workers' collectives of Tyumenskaya Oblast to promote competition for the oblast's industrial enterprises to recover ahead of schedule, during the 11th Five-Year Plan, 1 million tons of oil and 1 million cubic meters of gas per day. Almost all Soyuzneftemash enterprises located in Azerbaijan are sending a substantial part of their output to Siberia strictly on schedule.

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NEW CASPIAN SEMISUBMERSIBLE DRILL RIG TO GO TO APSHERON THRESHOLD

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 23 Aug 81 p 1

[Article by S. Semenova (Baku): "'Shel'f-1' Works on the Shelf"]

[Text] "The Main Directions for Economic and Social Development of the USSR During 1981-1985 and During the Period up to 1990," calls for the execution of measures to find oil and gas fields on the continental shelf. This task will be resolved particularly with the help of the new floating installation, "Shel'f-1'."

Can you imagine the day when the last ton of oil will be taken from the ground? This is, perhaps, rather difficult for us. But indeed, in the opinion of scientists, world reserves of oil (taking forecast reserves into account) can last us another 100 years, or 150 years at the most. And in order to postpone this date, at least in some measure, we are actively prospecting today for fuel at the bottom of the sea.

Already today we ride each fifth kilometer on oil taken from under the water. Soon it will be each third, and eventually each second kilometer. In other words, in time, half of all the oil will be recovered from the bottom of the sea....

...Alongside the "Shel'f-1" facility a person feels uncomfortable: the semisubmersible floating drill rig--the PPBU--is so enormous, so majestic. One pontoon alone is the size of a dance floor.

"Modern equipment and technology enable oil to be recovered from great depths," says PPBU chief O. Murshudli. "But its recovery costs much more than on land, the operating costs rising precipitously with increase in sea depth. However, by the end of the 1980's the difference in cost of offshore and land recovery should be eliminated. And our 'Shel'f-1' is one of the first steps in this direction."

"Yes, and in our day a new glorious page in the life of the Caspian is beginning," drilling foreman Yu. Salamov interjects in the conversation. "It is an audacious dream--to stretch a chain of steel islands from the shores of Azerbaijan to the shores of Turkmenia, and today it is becoming a practical program. We can do prospecting work at great depths."

The traditional offshore foundation is a metal platform on steel legs which are attached to the sea bottom. These are actually research islands. "Shel'f-1" rests not on soil but on pontoons submerged to a depth of 14 meters and securely tied down by 8 anchors. The installation is designed to be self-sustaining for a month. Everything has been anticipated here: cold-storage chambers for foodstuffs, laundry equipment, tanks for fresh water, and a reserve of equipment and reactants for the operations. It also has its own diving service and distilling installations, that is, absolutely everything for normal life for 25-30 days without a ship calling. That is why people here are specially selected—for not only does the sea like the daring but the daring like the sea.

Right now the geological formation that is called the Apsheron threshold is attracting the offshore recoverers of "black gold." This is an underwater group that divides Khazar in a latitudinal direction—from the Apsheron to the opposite shore. "Shel'f-1" should step on this very threshold.

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BAKU MACHINERY MAKERS CLAIM THEY GIVE OIL DRILLERS GOOD SUPPORT

Baku VYSHKA in Russian 19 Aug 81 p 1

[Article by K. Manafov: "We Are Checking on the Fulfillment of Commitments for Siberia's Oilfield Workers"]

> [Excerpts] Baku's machinebuilders have taken close to heart the CPSU Central Committee's decree about the initiative of Tyumenskaya Oblast laboring collectives to promote socialist competition to achieve ahead of schedule the recovery of 1 million tons of oil and 1 billion cubic meters of gas per day at the oblast's fields during the 11th Five-Year Plan. And Azerbaijan's machinebuilders are making their contribution to realization of the goal that has been set.

There is an area at the Machinebuilding Plant imeni Yu. Kasimov where new types of articles mastered by the enterprise are displayed. Their number was recently augmented by the LS-6 installation for studying wells, which is manufactured in accordance with a design by the Azerbaijan Scientific-Research Institute for Petroleum Machine Building. The production of a test model of the installation was called for by the collective's socialist commitments for 1981. The machinebuilders have kept their word.

"The new installation is for West Siberia's oilfield workers," says the plant's chief engineer, R. Efendiyev. "It is distinguished by high off-the-road capability, and the designs for the hoist, the installing assembly and the body have been improved. With its help a well up to 7 kilometers deep can be studied, whereas those previously produced were designed for 4,000 meters."

Competition to complete the Siberian oil workers' tasks ahead of time has been promoted more widely these days in the plant's sections and departments. A large group of circulating units and tank trucks has been readied for shipment to Tyumen'.

There are still no few other items in the machinebuilders' socialist commitments, the successful fulfillment of which will help Siberia's oilfield workers to achieve good indicators. For example, 400,000 rubles' worth of products above plan are to be realized, and the share of articles with the Emblem of Quality is to be brought up to 45 percent (while the plan calls for 38.2 percent).

The commitments are being supported by concrete examples. In the first 7 months of the year, 374,000 rubles' worth of output above the task was realized, the share of products with the Emblem of Quality was 50.4 percent, and four items of equipment that were being sent to Tyumen' were marked with the honorary pentagon.

The reequipping of the enterprise, the improvement of the workers' working conditions, and conversion to the brigade form of organization and wages are helping the collective's success.

In order that all output may be manufactured with high quality, the technical inspection section at the plant has been strengthened. An input monitoring office has been established at the OTK [technical inspection section]. It monitors the quality of arriving materials--raw and otherwise--and outfitting articles, and it checks the completeness of equipment.

The collective faces major tasks during the 11th Five-Year Plan. By 1985 production volume is to increase by 70 percent and be brought up to 50 million rubles' worth. It is planned that this goal will be met primarily through further technical reequipping, as well as by the construction of new facilities.

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HUGE PLANT BEING BUILT NEAR BAKU TO BUILD OFFSHORE PLATFORMS

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 4 Aug 81 p 1

[Article by L. Aleynik (Baku): "The Forge for the Steel Islands"]

[Excerpts] The world's largest plant for making deepwater foundations that will be used at Caspian Sea shelf oilfields is being built in Azerbaijan, not far from Baku. Erection of the metal structure of the main building was completed here the other day.

The "shipyard" should go into operation during the 11th Five-Year Plan. This task has been assigned to construction workers in the "Main Directions" for the country's economic and social development.

Steel bridging extends for many kilometers from the shore. It often ends only where the sea depth reaches 80 meters. But the geologists have discovered some high-quality oil and gas reservoirs still farther out from the Apsheron's rocks. You don't build bridging at such distances when the deposits are covered by 200 meters of water. How do you get the oil from the sea? The idea thus arose of building secure steel islands amid the waves, from which to pierce the underground storehouses. And a high-capacity specialized plant is being established for this purpose.

Four times per year a high-powered barge will cast off from the docks with the next man-made island. The barge will deliver it to the place indicated by the geologists, and there the reliable steel "legs" of the giant will stand up on the sea bottom, and high-strength piles will secure it reliably to the earth. And on the deck, whose dimensions are only a little smaller than those of a football field, a whole single-story "microrayon" made of prefabricated structure will rise up. It will have everything necessary for the living and working activities of the drillers and recovery workers. Each such island has been designed for drilling and servicing 24 deep holes.

Startup of the first phase of the enterprise was intended for 1983. The deadline is rigid. But already much has been done. Hydraulic engineers and hydromechanization specialists of Aztransstroy [Azerbaijan Transport Construction Trust] have deepened the plant's water area greatly, having moved more than 4 million cubic meters of marine soil and created a line of docks for the maritime port's plant.

Construction of the giant plant is going on over almost 127 square kilometers. The outlines of the main building have already been sketched out on the flat sandy shore. Giant columns, beams, girders and spans—more than 11,000 tons of metal have been erected in record time by erectors of Yuzhstal'konstruktsiya [Trust for the Erection of Steel Structure in the Southern Economic Region]. Success is also accompanying representatives of the republic's oldest order-winning trust, Azneftkhimmontazh [Azerbaijan Trust for the Erection of Chemical Industry Installations] in the erection of a 40-kilometer pipeline and regional purification structures. The closed water-circulation system that it is erecting will protect the sea from pollution.

The city of Primorsk, whose residents will be overwhelmingly workers at the plant, will be beautiful and green. Its palace of culture, stadium, vocational and technical school, polyclinic and hospital, kindergartens, and 9- and 12-story apartment houses with light and spacious apartments will rise up here. Already designs have been worked out for Pioneer camps and vacation housing and sanitoria for workers at medicinal springs. Large subsidiary activities with hothouses, livestock and fisheries departments also are called for. That's what the city will be like, where the world's first serial production of well-appointed steel islands for recovering oil in the open sea has been started.

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CASPIAN SEA INCREASINGLY FREE OF POLLUTION

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 30 Aug 81 p 4

[Article by APN [Novosti Press Agency] correspondent A. Agayev: "The Caspian Dilemma: Fish or Oil?"]

[Text] More than 80 percent of the world's reserves of sturgeon are in the Caspian--our planet's largest salt lake, whose dimensions, hydrological characteristics and origin establish a basis for calling it a sea. At the same time, this is our country's largest region of offshore recovery of oil and gas. You will agree that this is an unusual combination: fish and oil. Especially for an enclosed body of water.

"The Worldwide Oil Reservoir"

The Caspian was perhaps the first of the planet's seas to experience the destructive onslaught of industrial expansion. It all started in 1873 when, at the Balakhany suburb of Baku, the first oil gusher struck. The entrepreneurs who were observing this powerful eruption from the ground could not restrain their impetuous joy: "Long live Balakhany!" and "Pennsylvania is here now!"

These words proved to be prophetic. In 1898 Baku had not only overtaken but had also greatly surpassed the level of oil recovery in the USA. At the start of the 20th century Baku's share of the world's recovery was more than half, and the city was correctly called "The Worldwide Reservoir of Oil" in the guidebooks.

In later decades, in the Soviet era, oil refining, petrochemicals, metallurgy and machinebuilding--ecologically "dirty" industries--began to develop rapidly on the Caspian's shores. And 30 years ago the industrial development of underwater deposits was started, and the large offshore oil-and-gas recovery complex of Neftyannyye Kamni--an entire city on piles--grew up in the open sea. It is difficult for me to blame preceding generations for indifference to the Caspian's fate. In this regard I share the point of view of the well-known Baku oilfield worker Israfil Guseynov. He said: "It was a difficult time for the whole country. After the October Revolution, the civil war and foreign intervention came the years of restoration of Baku's oil industry, which supplied the whole country's industry with oil. Then the most difficult experience--the 4 years of the Great Patriotic War, when each ton of oil was needed so badly at the front. Then the postwar healing of wounds...."

And the Caspian was slowly but surely dying. I well remember this time. We Baku youngsters of the 1950's let not a day of hot weather go by without splashing around in the celebrated marine "bathhouse," which was then considered to be finer than any in Europe. Then for the first time, our parents prohibited our bathing--they had gotten tired of washing the oil off us with kerosene. Local civil organs established a final prohibition and soon the "bathhouse" was closed.

Decisive Measures Are Being Taken

In 1978 I happened to read surprise on the face of a man who had long ago lost the habit of being surprised by anything. This was Carlo Mauri, well-known Italian journalist and traveler, who had journeyed all over the whole world. What surprised him was the cleanness of the water. "But where is the oily dirt?" he asked of Anatoliy Khachiyan, one of the oilworkers. "You see, Signor Mauri, we had been warned previously about your visit, and during the night we managed to clean up the water area," joked the Baku resident.

Yes, today the condition of the Caspian does not provoke as much concern as it did 15-20 years ago. This is the result of decisive measures adopted in recent years. Without minimizing the contribution of social organizations and devotees of nature, I will note that the state played the chief role in the crisis that had been created. It issued a firm legislative order that required that the unique body of water be looked after and that its riches be preserved and multiplied.

By 1985 not one gram of industrial effluent will be discharged into the Caspian--this is how the task was stated in the Soviet Government's decree, "On Additional Measures for Preservation of the Caspian Sea from Pollution." But it stands to reason that this does not mean that industrial enterprises are waiting for the established date in order to cease polluting the water body all at once. Primarily a broad network of purification structures is being established, the erection of protective measures being called for simultaneously with the construction of industrial facilities.

Take, for example, the young city of Sumgait--a large Azerbaijan chemical center on the seacoast. Its enterprises process hundreds of thousands of tons of oil per year. The processing of 1 ton requires 16-18 cubic meters of water--it is not difficult to calculate how much "enriched" chemical effluent would be poured into the sea each year. But Sumgait's water is just as clean today as it was 30 years ago when the city had just begun to be built and the city's beach was one of the best in the Azerbaijan sector of the Caspian. The high-capacity purification structures of Sumgait's enterprises have helped here.

The same nature-conservation means are being used at the offshore oilfields. The processes associated with the drilling, recovery and transport of oil are completely sealed off.

Space technology is now being enlisted as a means for preserving the Caspian. In the Institute for Space Research of Natural Resources of the Azerbaijan Academy of Sciences, specialists are working out methods and instruments for the remote monitoring from space of the cleanliness of the offshore oilfields.

A Vacation Hotel for Sturgeon

Achieving the former purity of the Caspian is only a part of the matter. Another most important task is making up for the loss of unique piscatorial riches of the body of water, where the most valuable fish of the world live: beluga sturgeon, Russian sturgeon, sterlet, stellate sturgeon, spiny sturgeon, Caspian salmon, white salmon and many other types. For this purpose fish-breeding enterprises of Azerbaijan put into the sea each year millions of full-grown fingerlings, mainly of Caspian salmon and Russian sturgeon. The fish breeders use the newest data about the mechanisms of raising fish, the ecology of fish and their feeding, the optimal environment for their habitation, and so on. Azerbaijan ichthyologists place great hopes on the new breeds that have been obtained as a result of crossing beluga sturgeon and sterlet. The bester, as the scientists have named it, is undemanding in regard to food and gains weight far more rapidly than its ancestors. Among the most important measures was the prohibition 16 years ago of industrial sturgeon fishing in the sea. All this has helped sturgeon reserves in the Soviet sector of the Caspian to greatly surpass the level of previous decades.

A Problem Awaiting Solution

But does all this mean that the Caspian has no problems left at all? If that were only the case!

The Caspian has great variability of its level--at various times it has risen and fallen by several meters (right now it is 28 meters below sea level). Forecasts of future changes in the sea's level speak of the possibility of a further drop of it, which is fraught with extremely negative consequences--a reduction of the area for fattening fish, the shoaling of ports, and the need to prepare a new layout for city streets in the shore areas of cities.

The scientists have proposed several designs for stabilizing the sea's level. Among them is the discharge into the Caspian of a part of the flow of the country's northern rivers. This design has no few proponents, who call for laying a canal more than 1,000 kilometers long, which would join the Caspian with the Black Sea. However, ichthyologists still object: different ecological systems exist in these seas, so the given design, from their point of view, is dangerous for the fauna of the Caspian, whose waters are less salty than those of the Black Sea.

The problem of stabilizing the level of the Caspian is so complex that the efforts of Azerbaijan alone cannot cope with it. Therefore, many scientific-research and survey-and-design organizations of other republics that are doing work on the unified program coordinated by the USSR State Committee of the USSR on Science and Technology have become involved in solving it.

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EFFORTS TO USE TYUMEN' CASING-HEAD GAS RECOUNTED

Moscow EKONOMICHESKAYA GAZETA in Russian No 33, Aug 81 p 6

[Article by V. Dubrovin (Tyumen'): "Obstacles in the Way of Casing-Head Gas"]

[Text] The flow of crude oil from West Siberia's oilfields is increasing. A large amount of casing-head gas is extracted from the earth along with it. It goes to gas-treatment plants, where broad fractions of liquid hydrocarbons (natural gasoline) are separated. Motor fuel and raw materials for making synthetic rubber and other petrochemicals and chemicals are obtained from it. The dried gas is used at electric-power stations and boilerhouses and on industrial lines of heat-intensive production facilities.

Much has been done in the Middle Ob' region by way of utilizing casing-head gas. Modern plants have been erected on the outskirts of Nizhnevartovsk and Surgut, at Yuzhnyy Balyk, and at the Pravdinskoye field. They are capable of receiving and processing about 16 billion cubic meters of casing-head gas per year.

This has made it possible to extinguish the flares at the celebrated Samotlor and a number of other fields. The natural gasoline is now being fed along product pipelines to platforms for pouring into rail tank cars. Dry gas is supplied to the Surgutskaya GRES and it is transported over the Nizhnevartovsk-Tomsk-Kuzbass pipeline to Siberia's industrial regions.

Collectives of subunits of Minneftegazstroy [Ministry of Construction of Petroleum and Gas Industry Enterprises], USSR Minenergo [Ministry of Power and Electrification], USSR Minmontazhspetsstroy [Ministry of Installation and Special Construction Work] and Minnefteprom [Ministry of Petroleum Industry] have invested no small effort in creating the largest complex for the use of casing-head gas. Megiongazstroy [Megion Trust for the Construction of Gas Industry Facilities] and Sibneftegazpererabotka [Siberian Association for Oil and Gas Refining] distinguished themselves especially well during construction of the plants in Nizhnevartovsk and Belozersk.

"But it has not been possible to load our plants up to full design capacity," say the association's economists with annoyance. "Both the raw-material suppliers and the customers for the product are letting us down."

Gas treatment plants can be compared with a powerful heart that is operating in an inadequately developed system of blood vessels. The fact is that, as before, the construction at many oilfields of facilities for gathering gas and delivering it for treatment is lagging. Surgutneftegaz [Surgut Oil and Gas Recovery Association], for example, where only a fifth of the valuable material is being used, is working slowly. Work at the Var'yegansk group of fields by Megionneftepromstroy [Megion Trust for the Construction of Oil Industry Facilities] and Samotlortruboprovodstroy [Samotlor Pipeline Construction Trust] is going on unhurriedly. Ob'neftegazstroy [Ob' Trust for the Construction of Oil and Gas Industry Facilities] and Kholmogorsktruboprovodstroy [Kholmogorsk Pipeline Construction Trust] are delaying the establishment of a gas-gathering system at the Kholmogorskoye group.

On the other hand, a full charge for treatment plants depends upon the organization for marketing the product. It had been presumed that, with startup of the Yuzhnyy Balyk-Tobol'sk product pipeline and the first phase of the commodity and raw-materials base at the petrochemical combine that is under construction, the shipment of natural gasoline in rail tank cars would increase. However, this did not occur because of a lack of tank cars, but mainly because deficiencies at the base itself had not been eliminated. In particular, construction and installing work costing 700,000 rubles remained uncompleted at the gas distribution station. However, the general contracting trust, Bryansktruboprovodstroy [Bryansk Pipeline Construction Trust] of Minneftegazstroy, and its subcontractors have, in essence, stopped working here. But without this station the raw-materials and commodity base and other structures of the combine here cannot operate normally. Part of the natural gasoline still has to be pumped into the oil pipeline system. This is why it is important to speed up the pace of construction and to bring nearer the startup of the main production facilities of the Tobol'sk Petrochemical Combine.

Introduction of the Nizhnevartovsk-Tomsk-Kuzbass gas pipeline at design capacity will give the gas-treatment plants a big workload and, consequently, will permit dozens of flares to be extinguished. There are many bottlenecks here also. One of the main factors is a lack of interagency coordination. The fact is that Minnefteprom enterprises are gathering the gas at the oilfields and are treating it, while Mingazprom [Ministry of Gas Industry] organizations, or, to speak more precisely, its production association Tomsktransgaz, is building up marketing of the gas. While in later years oilfield workers will increase the amount of casing-head gas treated, the association named is not hurrying to bring the transport arterial up to the designed level, a matter in which the builders also "will help."

According to Tomsktransgaz director V. Tolmachev, matters are going quite well, and, if there are any kind of miscalculations, then the fault is USSR Gosplan's. The association's supervisor gives assurance that all six compressor stations will be started up for operation this year. However, there is nothing to justify his optimism.

Let us look at the situation at the Chazhemto station, which is being built and which, like all the others, is left over from 1978. From the time construction began, SMU-3 [Construction and Installing Administration No 3] of Ufa's Vostokneftеprovodstroy [Trust for Oil-Pipeline Construction in the Eastern Regions] (its manager is E. Bobrik) did work which was less than a fourth of the cost of the station, but the latest deadline for starting it up is in September. Nefteprovodmontazh [Oil Pipeline Erection Trust] (its manager is A. Maksimov) of Glavvostoktruboprovodstroy [Main Administration for Pipeline Construction in the Eastern Regions] is building the Vertikos station just as unsatisfactorily. Two stations are at the stage of being turned over to the state commission, and two have been started up in operation. But even here there is a "but," which V. Tolmachev prefers not to disseminate: the plan for the construction of housing and of facilities for social, cultural and personal-amenity purposes for station personnel has been disrupted.

The lag in the buildup of workers' settlements at the stations due for startup has been provoked by the passiveness of the customer itself--Tomsktransgaz--and inattentiveness to this matter on the part of Mingazprom. The fact remains that workers' settlements are in the stage of design and the assignment of land parcels to them.

Many elements are weak today in the big and complicated chain--the gathering, treatment and transport of dry gas and the marketing thereof. While for 9 months of the year hundreds of enterprises of Tomskaya, Kemerovskaya and Novosibirskaya Oblasts urgently require the delivery thereto of large amounts of casing-head gas, pumping it over the pipeline is sharply reduced in the summer. The fact is that the valuable chemical and industrial raw material is being used to a significant extent only in the form of fuel for TETs's and boilerhouses.

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PROGRESS IN ERECTING MUBAREK GAS-TREATMENT PLANT IS MIXED

Tashkent PRAVDA VOSTOKA in Russian 8 Aug 81 p 1

[Article by M. Karamov, Yu. Kruzhilin, V. Petrov and V. Shumaylov: "New Capacity for Startup"]

> [Excerpts] At the construction of the Mubarek gas complex.
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> The 20th report from the Correspondents' Center for PRAVDA VOSTOKA, SOVET UZBEKISTONI and UzTAG [Uzbek SSR Telegraph Agency].

There is a most feverish time at the gas complex's main construction sites: the introduction of new capacity is beginning. The booster compressor station, which was designed to move 55 million cubic meters of gas per day, has been turned over for startup and setting-up operations. Soon it will be presented to the state commission.

A brigade of the Central Asia Section of Soyuzgazmashremont under the supervision of Vladimir Prokhorov is readying the main equipment of unit No 2 of the third phase of the gas-treatment plant for operation. Troubleshooters have committed themselves to carrying out their task 6 days ahead of schedule. In this way they will continue the affair begun by preceding sections of the workers' relay race. The joint efforts of Mubarek builders have cut the time for erecting the most important facilities by more than half of the standard periods.

...And Those Who Are Slowing the Job

"Again it is Uzbekgidroenergostroy [Trust for the Construction of Hydroelectric Facilities in the UzSSR]!"

The mobile mechanized column of this trust, which is performing important tasks at Mubarek in the matter of supplying the complex with heat and power, has proved again to be among the laggards. As before, the startup of steam boiler No 3 is threatened with disruption. The unit, which is almost ready and should be put under a load on 12 August, cannot operate; the column under I. Berdyyev has delayed the assembly of auxiliary facilities, including such an important one as the facility for condensing spent steam. Measures were not taken last week to eliminate the lag. There are not enough skilled workers at the construction project. There are shortages of some materials. And, to speak frankly, there is not enough of a responsible attitude toward the job. The low quality of construction and installing work and the chronic lag behind schedule have been characteristic recently for this PMK [mobile mechanized column]. A most important facility of the September plan turns out to be threatened with disruption: the outdoor bus-and-switch structure for 220 kilovolts. There is still not enough water at Mubarek. These are the fruits of the lack of coordination permitted by Bukharagazpromstroy [Bukhara Trust for the Construction of Gas Industry Enterprises], which did not fulfill the state plan in July. It still has not managed to connect up the Kuyumazar-Mubarek waterline.

All efforts must be concentrated on the construction project's lagging sections, so that both facilities will go into operation in August.

Mubarek Is for the Country

The efforts of the best collectives of builders and installers and of designers and clients are being expended not just for the sake of victorious reports. Each hour won at the construction project acquires meaningful material expression and brings enormous advantages to our national economy. As reported by Mubarek Gas Treatment Plant director A. Makhmudov, the units of the third phase of the enterprise that were started up ahead of schedule have already produced 10 million rubles' worth of output. The country has obtained almost 80,000 additional tons of sulfur--a most valuable chemical raw material. Arterial gas pipelines have received 730 million cubic meters of cleaned, highly effective fuel.

The plant's engineers have again confirmed the high quality of the installing work that was done on the third phase. Both of the new installations--for scrubbing gas and for obtaining sulfur--are working with precision, without a hitch, and are holding strictly to the prescribed regime.

The introduction of each new operating element will multiply the yield of the whole complex. That is why it is so important for everyone to emulate the advanced collectives, that is why delays and interruptions of the construction schedules are intolerable. For here at Mubarek a meaningful contribution is being made in developing the fuel and power base, which the 26th CPSU Congress named as an unconditional prerequisite to the solution of all national-economic tasks.

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BRIEFS

NEW SEISMIC DETECTION TECHNIQUE--Shevchenko--A well drilled at the Oymasha tract has dictated a new view of the prospects for developing the main oil-bearing region of Kazakhstan--the Mangyshlak Peninsula. It helped in detecting liquid fuel in ancient granites where, according to former notions, there could be no deposits of "black gold." The integrated technology for detecting oil that was developed by the collective of Mangyshlakneftegeofizika [Mangyshlak Trust for Oil Geophysics Operations] helped in penetrating this secret of the earth. It has doubled the effectiveness of the geophysicists' main tool--seismic waves--and improved the "image" of rock deposits at great depths. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 21 Jul 81 p 1] 11409

KARAGANDA COAL-MINE RESULTS--The work of the collective of the Underground Mine Kirovskaya of Karagandaugol' [Karaganda Coal-Mining Association] greatly surpassed the schedule. The 100,000-th ton of fuel above plan since the start of the year has been shipped. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 35, Aug 81 p 3] 11409

ESTONIAN SHALE MINE REBUILT--Reconstruction of the oldest underground mine of the Estonian Shale Basin--Kokhtla--has been completed. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 18, Apr 81 p 3] 11409

LONGEST UNDERGROUND PIPELINE--Novopolotsk has received Tyumen' crude. Erection of the country's largest underground oil line, from Surgut to Polotsk, a distance of 3,300 kilometers, has thereby been completed. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 18, Apr 81 p 3] 11409

URENGOY-PETROVSK GAS PIPELINE--The 400-kilometer Urengoy-Petrovsk arterial gas pipeline has been constructed ahead of time. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 18, Apr 81 p 3] 11409

BAKU UNDERGROUND GAS STORAGE--Baku--The collective of the Kalmas Underground Gas-Storage Facility completed its August task for pumping blue fuel into the ground ahead of schedule. This means that, despite the late start of pumping this year, which was caused by the late spring, Baku residents will not feel a lack of heat this year, during the 1981-1982 winter. Success was achieved thanks to the good organization of work by the collectives of the compressor, production-operations and gas-field services and by the precision work of the pumping units and the injection wells, which are widely promoting socialist competition among the station's workers. [R. Berdiyan] [Text] [Baku VYSHKA in Russian 1 Sep 81 p 1] 11409

CHELEKEN OFFSHORE OIL RECOVERY--The collective of the Chelekenmorneftegazprom [Cheleken Offshore Petroleum Recovery Association] has fulfilled its socialist commitments for the year ahead of time. In the last days of August the oilfield workers of the old Cheleken oilfield gave 2,700 tons of "black gold" to the motherland above the plan. In the week prior to the All-Union Petroleum-Industry Workers' Day, at all oilfields of the association, oil and gas-field worker meetings were held at which it was decided to take up the valuable initiative of the workers of the collectives of Tyumenskaya Oblast to carry out the plan for oil for the 11th Five-Year Plan period ahead of schedule. After discussing their reserves, Cheleken recovery workers undertook a new, increased commitment to obtain 400 tons of crude above the previous socialist commitments by the end of 1981. The collective, which is operating Offshore Oilfield No 3, decided to recover 200 tons of fuel in addition to the original task. [B. Lebed', outside correspondent] [Text] [Ashkhabad TURKMENSKAYA ISKRA in Russian 30 Aug 81 p 2] 11409

ANGREN STRIP-MINE PERFORMANCE--Angren (Uzbek SSR)--The 100-millionth ton of coal was mined today at the Angrenskiy Strip Mine, Central Asia's largest. The crew of Ramait Urmanov's excavator were granted this honorary right. The strip mine's collective has made a confident start on the 11th Five-Year Plan: since the start of this year it has shipped to customers 140,000 tons of coal above the task. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 26 Jun 81 p 1] 11409

GEORGIAN THERMAL WATER--Tbilisi, 15 Aug--Georgia's thermal waters are acquiring ever newer "vocations." The construction of a large poultry farm has started close to the village of Akhala Kingra. Its departments and the workers' village that will rise up here will be heated by an underground source. The annual capacity of the factory, which should go into operation by the end of 1983, will be more than 8 million birds and more than 44 million eggs. The factory will supply poultry meat and dietetic eggs to the whole Abkhaz tourist-resort zone. [G. Lebanidze] [Text] [Moscow PRAVDA in Russian 16 Aug 81 p 6] 11409

NIZHNEVARTOVSK OILFIELD PERFORMANCE--Nizhnevartovsk (Tyumenskaya Oblast)--The collective of Nizhnevartovskneft' [Nizhnevartovsk Oil-Recovery Association] has recovered its 50-millionth ton of crude since the start of the year. The widely promoted socialist competition to recover 1 million tons of crude per day at the oblast's oilfields helped the Nizhnevartovskites to surpass the previously planned schedule. The builders especially distinguished themselves: they introduced more than 150 wells into operation--more than the plan called for. This will enable oil-recovery workers to cope ahead of time with the year's task to recover almost 85 million tons of liquid fuel. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 13 Aug 81 p 1] 11409

WIND MOTOR IN ARCTIC--Noril'sk--A wind motor with a power installation has started to operate on the Arctic's Messoyakha-Noril'sk gas pipeline route. Specialists of the Tsiklon Science and Production Association from Moscow's Istra suburb who installed the windmill on the Taymyr for the first time, consider the cheapest "fuel" to be practically inexhaustible in the Far North, where windless days are rare. The wind motor yields about 4 kilowatt-hours of electricity. But this is enough for heating and lighting the premises and for supplying power to the radio-relay apparatus. Three more such motors will soon be installed on the gas pipeline route. They will help to improve the working conditions of the standby services. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 27 Aug 81 p 1] 11409

PRIMORSKIY STRIP COAL MINE--Novoshakhtinskiy (Primorskiy Kray)--Mastery of the Severnyy section of the promising Pavlovskiy Strip Mine permitted the mine's collective to increase coal production sharply. It has 16 million tons of reserves. After creating an integrated brigade of excavator operators and dump truck drivers here, the miners greatly exceeded the enterprise's design capacity and increased fuel deliveries. Since the start of the year the strip mine has shipped more than 120,000 tons of coal above the plan. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 21 Aug 81 p 1] 11409

ROTARY EXCAVATOR FOR SIBERIA--Donetsk--The collective of the Donetsk Plant imeni Leninskiy Komsomol Ukrainy has manufactured a rotary excavator for the Azey Strip Mine of Vostsibugol' [East Siberian Coal-Mining Association]. The unit can mine more fuel in an hour at -40 degrees than the largest underground coal mine of the Donbass [Donets Coal Basin] yields per work shift. The machine loads coal continuously into rail cars that are sent directly to the mine face. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 4 Aug 81 p 1] 11409

SEMISUBMERSIBLE DRILL RIG OPERATES--Drilling of the country's first well in a part of the Caspian Sea where the water is 140 meters deep has begun at the Field imeni 28 April. The semisubmersible floating drill rig "Kaspmorneft'" helped to go to the designed depth, which is 1.5-fold more than what the drillers had achieved previously. The well will open up an oil-bearing formation 4,500 meters deep. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 33, Aug 81 p 3] 11409

BUTT FLASH WELDING--Butt flash welding has become more popular in recent years in constructing field and main pipelines. This method has been used in the USSR to weld about 30,000 km of pipelines 114-530 mm in diameter. Industrial approval of the butt flash welding has begun on the routes of pipelines 720-1420 mm in diameter. When pipelines 720-1020 mm in diameter are welded, a mobile power plant with power of 500 kW provides the power for the electrical contact units. When pipelines 1220-1420 mm in diameter are welded, the power comes from a power plant with output of 1000 kW. In order to improve the efficiency of butt flash welding of large-diameter pipelines, the All-Union Scientific Research Institute for Construction of Main Pipelines (VNIIST, Moscow) and the All-Union Scientific Research Institute of Electric-Arc Welding (VNIIESO, Leningrad) have developed a method and equipment which permit a 4-5-fold reduction in the indicated power plant powers for the welding units, and also a considerable decrease in fuel consumption. Inquiries on all technical questions concerning the new method of welding and the devices to implement it should be sent to the following address: USSR, 113148, Moscow, Ulitsa Novokuznetskaya, 23B, V/O "Soyuzzagrangaz" Minneftegazstroya, Tel. 233-51-41. [Text] [Moscow STROITEL'STVO TRUBOPROVODOV in in Russian No 7, Jul 81] [COPYRIGHT: Izdatel'stvo "Nedra" "Stroitel'stvo truboprovodov", 1981] 9035

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